Focus on **Reducing Diesel Exhaust**

From the Department of Ecology's Air Quality Program

Diesel exhaust – Washington's worst air pollutant

The Department of Ecology (Ecology) has developed a plan to reduce diesel exhaust. Recent studies show diesel exhaust is the air pollutant most harmful to health in Washington State. Seventy percent of the cancer risk from airborne pollutants is from diesel exhaust. It makes healthy people more at risk for respiratory disease. It also worsens the symptoms of people with health problems such as asthma, heart disease, and lung disease. More than four million people in Washington live or work close to highways and other roads where they are most likely to be exposed to diesel exhaust.

What makes diesel exhaust so harmful?

Diesel exhaust contains microscopic soot called particulate matter, or small particle pollution. The federal Environmental Protection Agency recently adopted a new air quality standard for this kind of pollution. All areas of Washington meet the old federal standard for small particle pollution, but Ecology expects some areas will ***not*** meet the new 2006 standard. In addition, recent research shows that diesel particles have very serious health effects even at levels much lower than what the new standard allows. Exposure to diesel exhaust causes both immediate and long-term health effects. Healthy children and adults become more at risk for respiratory diseases. People with pre-existing heart disease or circulatory problems are more likely to have a heart attack or stroke. Short-term exposure to diesel can irritate the eyes, nose, and throat, and cause coughing, labored breathing, chest tightness, and wheezing. Diesel exhaust can also lead to lung cancer, as well as cancers of the bladder and soft tissues.

Studies estimate that about 4.2 million people in Washington live and work near major urban roads, where diesel engine exhaust is most common. These people can be exposed to harmful levels of diesel particle pollution every day. Within these areas, there are about 4,000 day care centers, 1,500 kindergarten through grade 12 schools, 100 hospitals, and 200 nursing homes. These places all house the people most sensitive to diesel exhaust.

Major urban areas are not the only places where people come in contact with harmful levels of diesel exhaust. A small town near a rail yard, a rural school near a busy truck stop, and any place where a community and a major road meet – people at all these places can be exposed to harmful levels of diesel pollution.

Ecology's plan to reduce diesel exhaust

Ecology's Air Quality Program developed a diesel plan to guide its work on reducing diesel exhaust. In developing the plan, Ecology looked at the many sources of diesel exhaust and identified the ones most likely to affect public health. The goals of the plan are to:

- decrease the amount of diesel pollution being emitted into the air; and
- reduce the health effects of diesel pollution, especially for:
    - children, the elderly and people whose existing health problems put them at risk (sensitive populations); and

- economically disadvantaged communities that are exposed to a higher amount of air pollution then the population in general.

Key actions in the plan

Address existing diesel engines

Laws require new diesel engines to have very low emissions of the small particles and other pollutants in their exhaust that are dangerous to health. But to significantly reduce diesel pollution, we must clean up emissions from the large number of existing diesel engines. These existing engines – with higher emissions -- have a long life span, and we expect them to continue polluting for decades.

The most significant existing sources of diesel exhaust in Washington are:

- Commercial heavy duty on-road vehicles
- Non-road construction equipment
- Marine vessels and port related equipment
- Locomotive emissions (especially switchyards near population centers)

Ecology will use a phased approach to reduce diesel emissions from existing vehicles. This approach will first focus on reducing diesel exhaust from the above sources in areas where the most people are located. Areas with sensitive populations and economically disadvantaged communities will have priority.

Put new technologies on old engines

The first step in reducing diesel exhaust from existing engines will involve practices that are both cost effective and relatively easy to implement:

- Installing pollution reducing technologies on existing engines -- called “exhaust retrofitting”
- Reducing vehicle idling
- Add-on equipment, like aerodynamic fairings, that decrease fuel use and thereby reduce emissions from highway trucks
- Replacing older engines or vehicles

Next steps

Ecology will continue to track and evaluate other technologies and programs for reducing diesel exhaust, and will implement them as appropriate.

Ecology is also working cooperatively with the Puget Sound Clean Air Agency (PSCAA), the Ports of Tacoma and Seattle, and other agencies to develop a strategy and projects for reducing port-related diesel exhaust.

Ecology is actively seeking sources of funding to install retrofit equipment on diesel engines. In the past, funding has come from federal grants, money provided by the Washington State Legislature, and private matching funds.

Is reducing diesel exhaust worth the cost?

The benefits to human health outweigh the costs of reducing diesel pollution. The California Air Resources Board has found that every dollar invested in reducing diesel emissions results in three to eight dollars in savings in improved health, avoided health problems, or lower operating and maintenance costs for diesel fleets. The Union of Concerned Scientists estimates that, for every dollar invested in diesel retrofits, nine to 16 dollars are returned to society.

For more information

For more information about Ecology's diesel strategy, please visit: http://www.ecy.wa.gov/programs/air/cars/DieselEmissionPage.htm or contact:

Frank Van Haren
(360) 407-6870

Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

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